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Original Article

THE EDIBLE WEEDS AND THEIR TRADITIONAL USE IN THE HUMAN NUTRITION IN THUCKALAY BLOCK, KANYAKUMARI DISTRICT

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ABSTRACT

The paper deals with enumeration of edible weeds frequently used by local communities of Thuckalay, Kanyakumari District. The information about the use of edible weeds was collected from 50 areas in the city over a period of one year (2017 to 2018) through unstructured interviews. In this study, a total of 55 weed food plants belonging to 32 families were established and also plant parts used, ethnographic data related to vernacular names and the traditional uses were recorded. Family Lamiaceae and Amaranthaceae were represented by the highest number of taxa (06), followed by Solanaceae (03), Rubiaceae (02), Cyperaceae (02), Astraceae (02) and Passifloraceae (02). The most commonly used species in the region are Amaranthes spinosus L. Hemidesmus indicus L. Alternanthera sessilis L. Cyanodon dactylon L. Solanum torvum L. Canthium coromandelicum (Burm.f) Centella asiatica L. Chenopodium album L. Colacasia esculenta L. and Ocimum santum L. The study showed that the plants used are either eaten raw, or cooked by boiling in water, frying in oil. The present study will provide critical information on the nutrition of the local people and may also help them to focus their attention on income generation and management of the resources.

KEYWORDS: Edible, Income, Nutrition, Resources & Weed

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INTRODUCTION

Weeds are comprised of the more aggressive, troublesome and undesirable elements of the world‘s vegetation King L.J (1974). While the term “Weed” generally has a negative connotation, many plants known as weeds can have beneficial properties. A number of weeds such as the Dandelion and Lamb’s quarter are edible and their leaves or roots may be used for food or Burdock is common over much of the world, and is sometimes used to make soup and medicine in East Asia Burdock Root (2015). The USDA recommends eating one half cup of green leafy vegetables each a day to prevent nutrient efficiencies and serious illness Tanya Brown (2018). Edible plants are important in the mediterranean diet, which is a source of food and an income for poor communities, and considered as a healthy diet by many. In recent years, Mediterranean diet has been promoted as a model for healthy eating. Dogan *et al*., (2013). Several previous studies have described the traditional knowledge about the plants in the research area and the uses and different needs for them such as medicine. Polat R. (2012)

In view of this fact, the present work was carried out to provide a comprehensive account of edible weeds of Thuckalay, Kanyakumari District. During the study an extensive survey of the edible weeds was done and the species used in traditional nutrition were enumerated.

MATERIALS AND METHODS

Study Area

Villukuri, Thuckalay Block is a town in Kanyakumari District of Tamilnadu, India. Thuckalay comes under the Padmanabhapuram municipality, and is the administrative headquarters of Kalkulam taluk. Villukuri has a tropical climate. When compared with winter, the summers have much more rainfall. The temperature average is 27.4° C. In a year, the average rainfall is 1157 mm. It is lying between 8.2426° N latitude, 77.3152° E longitude. The soil type is Laterite. The total population is 21,342, in which 10, 518 are males and 10,824 are females as per the report released by Census India (2011). It is located near Mambazhathurayar reservoir.

Data Collection

The study area was investigated to get information from local peoples and also to cross check the information provided by the other local peoples during the earlier visits. The survey was carried out from 2017 to 2018. The questionnaire was generally administered to people over 50 who have more knowledge about plants. During the interviews, demographic characteristics of the study participants, and local names, utilized parts and preparation methods of the weed food plants were recorded. Collected plant species were identified with local and regional floras- flora of presidency of Madras (Gamble and Fischer 1935). Flowering plants the Western Ghats India (T.S. Nayar *et al*.,2014) was followed to classify the species and binomial was checked with the International Plant Names Index (IPNI). Herbarium specimens were collected and voucher specimens deposited in the herbarium of Department of Botany, NMCC, Marthandam.

Data Analysis

Use Value (UV)

The use value[20], a quantitative method that demonstrates the relative importance of species known locally, was calculated according to the following formula:

$$UV=U/N,$$

Where, UV refers to the use value of a species; U is the number of citations per species; and N is the number of informants.

Map of the Study Area

Figure 1: Study Area

RESULTS AND DISCUSSIONS

Table 1: Edible Weeds in Thuckalay, Kanyakumari District

Edible Weed Plants in Thuckalay						
No	**Plant Species**	**Family**	**Vernacular Name**	**Edible Parts**	**Utilization Method**	**UV**
1	*Aerva lanata* (L.) Juss.ex Schult	*Amaranthaceae*	Ulinai	leaves, flower	Cooked by boiling in water	0.51
2	*Aloe vera* L.	*Aloaceae*	Kattalai	Leaves jelly	Eaten fresh	28
3	*Alternanthera sessilis* L.	*Amaranthaceae*	Ponnankani	Leaves	Cooked as vegetables	0.74
4	*Amaranthus dubius* L.	*Amaranthaceae*	Arraikeerai	Leaves	Eaten raw	0.12
5	*Amaranthus retroflexus* L.	*Amaranthaceae*	Mullukeerai	Leaves, Flower	Cooked as vegetables	0.32
6	*Amaranthus spinosus* L.	*Amaranthaceae*	Mullancheera	Leaves	Cooked vegetables dish	0.84
7	*Amaranthus viridis* L.	*Amaranthaceae*	Kuppai keerai	Leaves, Flower	Cooked as vegetables	0.41
8	*Asparagus officinalis*	*Liliaceae*		Whole part	Making as vegetable	0.12
9	*Asparagus racemosus* Willd.	*Liliaceae*	Shatavari	Tuber	Boiled and eaten	0.21
10	*Bacopa monnieri* (L.) Pennell	*Scrophulariaceae*	Nirpirami	Whole part	Making as juice	0.12
11	*Boerhavia diffusa* L.	*Nyctaginaceae*	Mukkurttaikoti	Leaves	Cooked as vegetables	0.12
12	*Canthium coromandelicum* (Burm.f)	*Rubiaceae*	Karaikai	Fruit	Eaten fresh	0.63
13	*Canthium parviflorum* Lam.	*Rubiaceae*	Sengarai	Fruit	Eaten fresh	0.48

Table 1: Contd.,

14	*Cassia tora* L.	*Fabaceae*	Taghrai	seed	As herbal tea, cooked as vegetables	0.42
15	*Centella asiatica* L.	*Apiaceae*	Vallarai	Leaves	Eaten fresh	0.82
16	*Chenopodium album* L.	*Chenopodiaceae*	Paruppu keerai	Leaves	Cooked as a stew or egg vegetable dish	0.78
17	*Cissus quandrancularis* L.	*Vitaceae*	Pirandai	Shoot	Making as chutney	0.62
18	*Cleome viscosa* L.	*Cleomaceae*	Naikaduku	Seed, Leaves	Used as mustard,pickles, Vegetables	0.12
19	*Cocculus hirsutus* (L.) Diels	*Menispermaceae*	Kattukkoti	Leaves	Cooked as vegetables	0.12
20	*Colocasia esculenta* (Linn.)	*Araceae*	Sempu	Corn	Cooking as vegetable	0.62
21	*Cyanodon dactylon* L.	*Poaceae*	Arugam pull	Whole part	Making as Juice	0.62
22	*Cyclea peltata* Hook.f& Thoms	*Menispermaceae*	Patakkilangu	Leaves	Making as jelly	0.12
23	*Cyperus esculentus* L.	*Cyperaceae*	Palkorai	Tubers, nuts	Eaten raw	0.28
24	*Cyperus rotundus* L.	*Cyperaceae*	Korai kilangu	Tubers	Eaten raw	0.17
25	*Digera muricata* (L.) Mart.	*Amaranthaceae*	Toya keerai	Leaves	Cooked as vegetables	0.24
26	*Eclipta prostrata* Roxb.	*Asteraceae*	Karisalankanni	Leaves	Cooked and eaten along with boiled rice	0.21
27	*Gynandropis pentaphylla* Dc	*Capparidaceae*	Thaivalai	Whole part	Making as Juice	0.17
28	*Hemidesmus indicus* L.	*Apocyanaceae*	Nannari	Lev Root	Cooked by boiling in water	0.92
29	*Hygrophila auriculata* Nees.	*Acanthaceae*	Nirmulli	Leaves	Cooking as vegetable	0.21
30	*Jasminum angustifolium* Vahl	*Oleraceae*	Kattumallikai	root	Making as Juice	0.15
31	*Mentha arvensis* L.	*Lamiaceae*		Bra, Flo	As spice	0.36
32	*Nelumbo nucifera* Gaern.	*Nymphaceae*	Taamara	Rhizome	Cooked as vegetables	0.21
33	*Ocimum basilicum* L.	*Lamiaceae*	Karpuratulasi	Leaves	As spice	0.44
34	*Ocimum santum* L.	*Lamiaceae*	Tulsi	Whole part	Raw	0.83
35	*Opuntia elatior* Mill.	*Cactaceae*	Sappathikalli	Fruit	Eaten raw	0.32
36	*Oxalis corniculata* Linn.	*Geraniaceae*	Puliyarai	Leaves	Cooked and eaten along with boiled rice	0.12
37	*Oxalis latifolia* Kunth.	*Geraniaceae*	Puliyarai	Leaves	Cooked and eaten along with boiled rice	0.12
38	*Passiflora edulis* Sims.	*Passifloraceae*	Tappasupalam	Fruit	Eaten raw	0.28
39	*Passiflora foetida* Linn.	*Passifloraceae*	Kurukkan pazham	Fruit	Eaten raw	0.17
40	*Peperomia pellucida* (L.)	*Peperomiaceae*	Kannadippacha	Leaves	Cooked as vegetables	0.17
41	*Physalis peruviana* L.	*Solanaceae*	periyathakkali	Fruit	Cooking as vegetable	0.32

Table 1: Contd.,

42	*Plectranthu amboinicus* (Lour.)	*Lamiaceae*	Navarapachilai	Leaves	Making as Juice	0.21
43	*Porulaca oleraceae* L.	*Portulaceae*	Paruppu keerai	Aer,Lea	Fresh as salad,leaves cooked vegetables	0.09
44	*Salvia officinalis* L.	*Lamiaceae*		Bra, Flo	As herbal tea	0.17
45	*Scoparia dulcis* L.	*Scrophulariaceae*	Kallurukki	leaves	Making as Juice	0.28
46	*Solanum nigrum* L.	*Solanaceae*	Manathakkali	Fruit	Cooking as vegetable	0.21
47	*Solanum torvum* L.	*Solanaceae*	Chundaikai	Fruit	Making as curry	0.53
48	*Stellaria media* (L.) Vill.	*Caryophyllaceae*		Leaves	Boiled and eaten raw	0.38
49	*Tephrosia purpurea* Pers.	*Fabaceae*	Kolinchi	seed	As coffee	0.08
50	*Toddalia asiatica* (L.) Lam.	*Rutaceae*	Kattumilagu	Leaves	Eaten raw	0.12
51	*Trianthema portulacadtrum* L.	*Aizoaceae*	Sharunnai	Leaves	Eaten fresh	0.21
52	*Tridax procumbens* L.	*Asteraceae*	Muriampacchila i	Whole part	making juice	0.12
53	*Typha angustifolia* L.	*Thphaceae*		Rhizome	Boiled and eaten raw	0.38
54	*Vernonia cinerea* (L.) Lees	*Asteraceae*	Pavamkurunthal	flower	Cooking as vegetable	0.04
55	*Vitex negundo* L.	*Lamiaceae*	Nochi	Leaves	Raw	0.28

The interviews were individually carried out with members of the local Thuckalay Population. Totally 55 plants of edible weeds have been used in this study area. The most common families are: *Lamiaceae* (6 plants), *Amaranthaceae* (6 plants), *Solanaceae* (3 plants), *Rubiaceae* (2 plants), *Cyperaceae* (2 plants), *Astraceae* (2 plants) and *Passifloraceae* (2 plants). The overall number of taxa cited of the most used botanical families can be seen in Figure 2(Figure 2). The high percentage of raw consumption of plants could be explained by consumption of plants are: Canthium *coromandelicum, Centella asiatica, Aloe vera, Canthium parviflorum, Amaranthus dubius, Cyperus rotundus, Cyperus esculentus, Ocimum sanctum, Vitex negundo and Opuntia elatior*. Some of them are consumed as cooked vegetable dishes (20 plants), and dishes boiled in water (5 plants). Some of them are used as spice (2 plants), as herbal tea (2 plants), as juice (6 plants), as jelly (2 plants) and as salad (1 plant). Most of the edible weed plants are common and growing in crop condition as weeds. (Balick 1997). It was also observed that some weeds are edible. In this region is not used elsewhere in the country. The inventory findings reinforce that indigenous knowledge is dynamic and botanical knowledge is diminishing (Alcorn 1989).

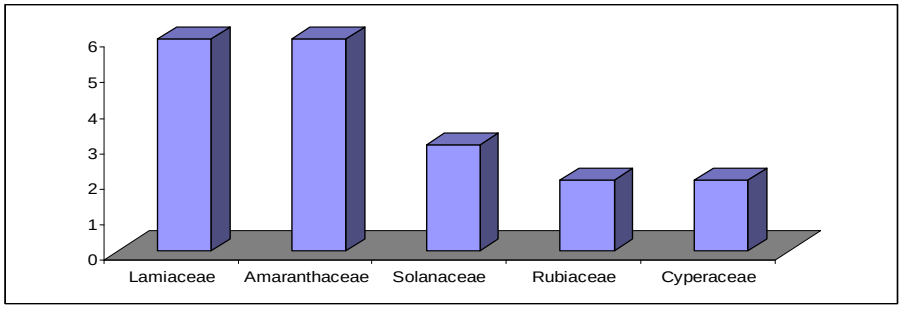

Figure 2: Most Representative Families

Plate 1: Edible Weeds in Study Area

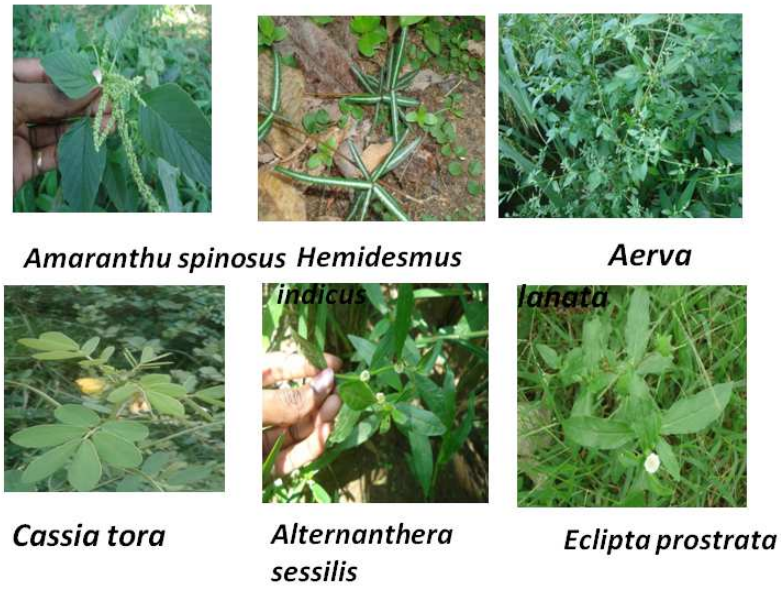

Figure 3

CONCLUSIONS

In total 55 taxa were identified as edible weed plants in the study area being to 32 different families. Lamiaceae and Amaranthaceae were being the most commonly consumed family in the Thuckalay region. The most commonly used species are *Amaranthes spinosus* L. *Hemidesmus indicus* L. *Alternanthera sessilis* L. *Cyanodon dactylon* L. *Solanum torvum* L. *Canthium coromandelicum* (Burm.f) *Centrella asiatica* L. *Chenopodium album* L. *Colacasia esculenta* L. and *Ocimum santum* L. The present study shows the functions of edible plants as a sign of the cultural identity of Thuckalay people and also reveals the vital importance of weed plants in building the typical taste and characteristic methods of preparing and eating food. The results also revealed that edible weeds are also under growing pressures from various anthropogenic factors. Thus public awareness and community based management need to be encouraged at all levels. Finally, we suggest that the cultural heritage handed over through generations about weed edible plants, which are important as a food source, should be studied and presented for the use of all humanity

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